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ABSTRACT

This report is intended to provide a framework for state-level policy and planning in relationship to postsecondary education's role in workforce development. Underlying the report is a set of principles and priorities designed to reflect and shape current policy agendas, and which will address the needs of college-bound high school graduates, workers needing retraining or upgrading of skills, unemployed and underemployed workers, and employers. In separate sections the report covers topics such as: the role of postsecondary education as a factor in workforce development; broadening the school-to-work framework; building a collaborative system of education and training; capitalizing on the distinct roles of learning providers; improving learner productivity; helping learners make informed choices; connecting learning and work, and defining skills needed by new employees; and supporting teachers and faculty. In a final section the report defines an agenda for state higher education boards that includes high school feedback and admissions, articulation with and transfer to postsecondary education, follow-up of program completers and better employer feedback, integration of classroom-based and work-based learning, and effective coordination and planning. The names of participants and institutional leaders at two 1996 conferences on this topic in Racine, Wisconsin, and Denver, Colorado, are appended to the report. (Contains 11 references.) (CH)

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POSTSECONDARY EDUCATION AND THE NEW WORKFORCE

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The State Higher Education Executive Officers is a nonprofit, nationwide association of the chief executive officers serving statewide coordinating boards and governing boards of postsecondary education. Its objectives include developing the interest of the states in supporting quality higher education; promoting the importance of state planning and coordination as the most effective means of gaining public confidence in higher education; and encouraging cooperative relationships with the federal government, colleges and universities and other institutional state-based association. Fifty states and Puerto Rico are members.

Copies of this report are available from the SHEEO Office, 707 Seventeenth Street, Suite 2700, Denver, CO 80202-3427, (303) 299-3686

FOREWORD

The passing of the industrial age and the coming of the information age have created extraordinary changes in the economy and sometimes disruptive changes to the nation's workforce. For many Americans, the nature of work has changed, and with it, the skills and knowledge needed to be successful in the workplace. And there is growing recognition that education and training are inextricably linked to employment opportunities and economic well-being.

A skilled, educated and motivated workforce is the essential ingredient for building and maintaining strongly competitive state and national economies. Without such a workforce, our security is seriously threatened. For the past decade, leaders in business, government, education, and labor have expressed concerns about the flagging skills and abilities of American workers. As a result, nearly every state has included education and training, sometimes called a "workforce development component," in its economic development plans.

THE PURPOSE OF THIS REPORT IS TO PROVIDE A FRAMEWORK FOR STATE-LEVEL POLICY AND PLANNING RELATED TO POSTSECONDARY EDUCATION'S ROLE IN WORKFORCE DEVELOPMENT

The purpose of this report is to provide a framework for state-level policy and planning related to postsecondary education's role in workforce development. At the foundation is a set of principles and priorities designed to reflect as well as shape current state policy agendas. Taken collectively, the principles and priorities represent a statement of state postsecondary education leadership and commitment to workforce development. Taken separately, each statement reflects a specific objective designed to advance the call for state leadership; encourage a "common language" that will bring higher education more centrally into workforce development discussions; help policymakers and educators focus on the needs of learners; and promote cooperation and coordination among education sectors, employers and local, state and federal government entities.

Strengthening the connection between postsecondary education and workforce preparation has long been one of SHEEO's highest priorities. In 1992, in *Building a Quality Workforce: An Agenda for Postsecondary Education*, SHEEO urged its members to develop partnerships with other education leaders to prepare and retrain their states' workforces. In 1995, SHEEO commissioned the report *Enhancing the Connection Between Higher Education and the Workplace: A Survey of Employers* by Carl Van Horn. And, in 1996 SHEEO published *The Roles of Postsecondary Education in Workforce Development: Challenges for State Policy* by Robert A. Wallhaus. Both documents focused on the current economic climate driving the need for higher education to play a leadership role in statewide workforce prepara-

tion systems. Much of this report's content is synthesized from the collective wisdom and best thinking of leaders in higher education, business, industry, and government who joined SHEEO and its co-sponsoring organizations at two recent meetings.

The first meeting was a Wingspread Symposium called Toward More Effective Learning Environments: The Role of Postsecondary Education in Workforce Preparation held February 22-24, 1996 in Racine, Wisconsin. In May 1996 a two-day Western Regional Conference on the Role of Postsecondary Education in Workforce Preparation was held in Denver, Colorado. Appendices A and B provide a list of participants at the Wingspread and Western Conference meetings. The common aim of both was to link postsecondary education to state and national workforce preparation agendas currently being developed across the country.

The foundation for this report is the Statement of Principles and Priorities. It is based on comments made by participants at the Wingspread Symposium and expanded at the Western Conference, and has been used to fuel further workforce development discussions involving community colleges and technical institutes, as well as baccalaureate degree-granting colleges and universities. This report does not endorse a particular set of strategies that states should adopt. Specific strategies need to be based upon each state's existing economic, educational and social conditions. However, we do provide examples to illustrate how broad objectives are realized at the state level. More importantly, this framework provides direction to help state higher education coordinating and governing boards develop an agenda within statewide workforce development systems.

ACKNOWLEDGMENTS

The SHEEO workforce preparation agenda emerged from our association with several organizations and individuals who have contributed greatly to the knowledge of workforce development in this country. We asked many to advise us during informal and formal discussions on the specific roles of state higher education boards, colleges and universities related to workforce development. And, we have borrowed liberally from their work. In particular, we have relied on the understanding and counsel of Robert Wallhaus, Carl Van Horn, Peter Ewell, Dennis Jones, Daniel Hull, Henry Spille, W. Norton Grubb and Anthony Carnevale.

We could not have moved forward on this agenda without financial support and organizational collaboration. The following organizations and individuals co-sponsored our conferences and provided critical suggestions for developing the programs. The Wingspread Conference: Education Commission of the States (ECS), Charles S. Lenth; The Johnson Foundation, Susan Poulsen; American College Testing (ACT), Donald J. Carstensen and Thomas H. Saterfiel; Educational Testing Service (ETS), Herbert Flamer; and the U.S. Department of Education, Office of Educational Research and Improvement (OERI), Barbara Lieb. The Western Regional Conference: Western Interstate Commission for Higher Education (WICHE), Richard Jonsen, Dewayne Matthews, Jere Mock and Cheryl Blanco; The College Board, Janice Weinman and Irene Spero; ETS; BankAmerica Foundation, Caroline Boitano; and US West Foundation, Theresa Montoya.

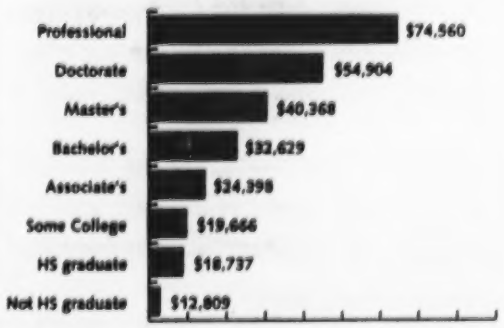
Finally, this work and our continuing activities are guided by state higher education leadership. We would especially like to thank the 1996 SHEEO Committee on Workforce Education and Training for their commitment to this initiative: Jeffrey Baker (Chair), Kenneth H. Ashworth, Hans Brisch, James A. Busselle, Roy C. Carroll, Marc Gaspard, Diane S. Gilleland, Bruce Hamlett, Larry Isaak, Richard S. Jarvis, Stephen M. Jordan, Stanley Z. Koplik, Katharine Lyall, Bryant Millsaps, Marilyn Quinn, Kala Stroup, and Richard D. Wagner.

POSTSECONDARY EDUCATION'S ROLE IN PREPARING THE NEW WORKFORCE

A college education is highly valued in our society. Clearly, postsecondary education's vital link to economic security is but one of its benefits; yet for many students, policymakers, and the public it is the single most compelling reason to attend college. There is mounting evidence that educational attainment determines the "haves" and "have nots" in our society. According to current U.S. Census Bureau data, more education means more earnings. And the highest earnings accrue to those persons with education beyond the high school level. Put simply, from an individual's perspective, when it comes to getting and keeping a good job, a college education can make a significant difference.

EDUCATION CONTINUES TO BE THE TICKET TO HIGHER EARNINGS

Mean annual earnings for persons aged 18 and over, by level of education: 1992



Source: U.S. Bureau of Census, Statistical Brief August 1994

As skill requirements continue going up across the board, a higher-than-ever premium is placed on education and technical knowledge. There is little doubt that given the current trend, the demand for postsecondary education will continue to rise. To a large extent postsecondary education will be expected to deliver the new workforce. At the same time, colleges and universities themselves are undergoing structural and organizational changes driven by the demands of a changing economy. Like business and industry, the new watch words for postsecondary education include: cost, quality, customer service, accountability, convenience, and choice.

These internal and external forces make a compelling case for colleges and universities to be a more integral part of a workforce development system that is directly responsive to the educational needs of students, employers, and the public. If higher education fails to respond to these challenges, it will face increasing regulation by public authorities and decreasing public and private support. Additionally, competition from the private for-profit sector will likely increase.

Within this changing economic and political environment, colleges and universities must try to accommodate several groups of learner and employer "clients":

- **college-bound high school graduates:** Over 60 percent of high school graduates enroll in postsecondary education following graduation. Recent surveys of college freshmen consistently show that being "able to get a better job" is the number one reason in deciding to go to college.[1]
- **workers needing to retrain or upgrade skills:** Colleges and universities also are being asked to prepare returning students for further education and work. Often these older students want more education but not necessarily a degree. A recent public opinion survey suggested that rapid technological change and new careers mean that people must continually retrain and retool. Getting educated once is not enough in our knowledge-based

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economy. The survey found that interest in additional education is highest among those who already have college training, and those with college training are the ones who are most often continuing their education in one form or another.[2]

- **unemployed and underemployed workers:** Emerging state strategies will have to address the education and training needs of individuals who currently live in poverty and are either jobless or work for low pay. A great majority of these citizens are under-educated and lack the skills needed for success in the workforce. For the most part, they have had limited opportunities for adult education and job training, and if such training is available, it has tended to be in short-term programs that have not helped under-prepared individuals make successful transitions to the workplace.[3]

- **employers:** Complementing the education and training requirements of learners are the needs of employers for a ready-trained workforce. Recent national and state surveys of employers indicate that they are eager to work with colleges and universities to upgrade the skill levels of entry-level employees, and to provide continuing education and retraining for their current workforces.[4]

Given these facts, why is higher education still at the periphery in discussions about workforce concerns and in the search for solutions? What is postsecondary education's role in addressing workforce needs? What can state higher education leaders do to create an environment that is responsive to what students, employers, policymakers, and the public want from postsecondary education?

Principles and Priorities

The Statement of Principles and Priorities on page 3 was developed by SHEEO to define the leadership role that postsecondary education should play in workforce development in the states. The statement is designed to reflect as well as shape state policy and planning agendas and it is offered here to fulfill two purposes.

On the one hand, the statement, in its entirety, can be considered a tool to help rally commitment to a broader and more learner-focused approach to postsecondary education's role in workforce development systems. It can serve as a conceptual framework and "reminder" that workforce-related issues must be addressed as part of policy deliberations on issues of postsecondary education access, cost, and quality. The state higher education leaders involved in its development suggest the statement also could be used to help define the roles of state higher education coordinating and governing boards within this system, and they encourage its distribution to governors' offices, legislatures and other state agencies.

On the other hand, the statement can be viewed as nine interrelated objectives, any one of which can be the basis for a separate state level initiative. In the sections that follow, each of these objectives is described in more detail.

STATEMENT OF PRINCIPLES AND PRIORITIES*

Create a vision for postsecondary education in workforce development

The following principles provide the basis for building an effective workforce development system:

- The highest priority should be placed upon enhancing workplace skills at all levels of education.
- All levels of education need to significantly expand work-based learning opportunities and place learning content into work contexts.
- Learning is continuous, and the readiness to learn is the most critical skill of all.
- The capacity to build upon prior learning, and to make seamless transitions from one learning experience to another, is essential.
- Workforce development efforts must be tailored to the distinctive training and educational needs of regional economies, communities and employers.

Broaden the "school-to-work" framework

The above principles are consistent with federal workforce development block grant legislation as well as the School-to-Work Opportunities Act. However, they must be broadly conceived to draw upon the full contributions of all education, training and learning providers (including colleges and universities, community colleges and vocational-technical institutions). It is better, for example, to emphasize "education-to-careers-to-further education" than the narrower, linear perspective implied by the term "school-to-work."

Build a collaborative system of education and training

State Higher Education Executive Officers (SHEEOs) and other state education officials should play a leadership role in developing and implementing statewide workforce development systems, and participate in human resource investment councils and similar state-level entities. At the same time, these state education leaders should be receptive to changes that are necessary to achieve effective coordination and division of responsibility with other units of state government, and to ensure broad collaboration with all stakeholders, including business and labor.

Capitalize on the distinct roles of learning providers

The roles of learning providers should be differentiated to capitalize upon their distinctive missions and strengths. At the same time they should work toward coordination and sharing of resources to maximize their collective contributions.

Improve learner productivity

Expanded efforts must be made to improve "learner productivity" by:

- making education and training "learner-centered"
- holding high expectations for learners
- supporting active learning
- capitalizing on technologies to achieve flexibility and access to learning
- making effective use of the time and resources of learners as well as providers.

Help learners make informed choices

Learners must have sound information and counsel upon which to base optimal choices regarding learning experiences.

Connect learning and work

Learning providers must strive to build effective partnerships with business and create effective linkages with work-based and other modes of learning.

Ensure an effective system

Learning processes should incorporate a common language and understanding that are shaped by high standards of performance, as well as incentives to support high levels of achievement; all learning providers should be held accountable to identified performance standards.

Support teachers and faculty

SHEEOs and other state education officials should work together to ensure that teacher education programs and professional development opportunities for practicing teachers are responsive to the need to better prepare elementary and secondary students for work and further education and training.

* The term "learner" is used in its broadest sense to encompass the full scope of possible education, training and learning experiences; and similarly the term "learning provider" is used to capture the full range of sponsors of these learning experiences.

CREATE A VISION FOR POSTSECONDARY EDUCATION IN WORKFORCE DEVELOPMENT

All who participated in our discussions, from education, government, business, and community sectors, underscored the critical and essential component of postsecondary education leadership committed to a vision for workforce preparation. A necessary first step is to establish a vision and set goals for the state that are based on shared beliefs and which articulate clearly the role of postsecondary education.

The following principles provide the basis for building an effective workforce development system:

- **The highest priority should be placed upon enhancing workplace skills at all levels of education.**
- **All levels of education need to significantly expand work-based learning opportunities and place learning content into work contexts.**
- **Learning is continuous, and the readiness to learn is the most critical skill of all.**
- **The capacity to build upon prior learning, and to make seamless transitions from one learning experience to another, is essential.**
- **Workforce development efforts must be tailored to the distinctive training and educational needs of regional economies, communities and employers.**

In particular, discussants emphasized that state higher education leadership must play a pivotal role in this "vision-setting" process by responding in highly visible and clearly defined ways to calls for preparing a new workforce. A few recent state examples where this has occurred:

- In the North Dakota Plan for Identifying and Responding to Workforce Training Needs, both the new seven-year plan and the new strategic academic plan approved by the State Board of Higher Education are more "customer focused" than previous plans and have specific objectives aimed at workforce education and training. The goal of the plans is to "create a collaborative, responsive workforce training capacity with the University System that is capable of anticipating and meeting the needs of students, business, industry, and the economy of North Dakota."
- The Illinois Board of Higher Education sets out in its 1996 Workforce Preparation Action Plan the need for improved preparation among all learners. It identifies six goals: (1) academic and technical skills development; (2) current workforce skill advancement; (3) access to career information, education and training; (4) transitions to work; (5) linking classroom and workplace learning; and (6) collaboration, quality and accountability.
- The Minnesota Education to Employment Transitions Council has developed a plan that includes this simple vision statement: "All Minnesotans will make successful education and employment transitions." There are 10 guiding principles for getting it done: (1) establish and be driven by multi-sector partnerships; (2) establish a lifelong approach to workforce concepts; (3) establish standards by which to measure success; (4) encourage learners to take primary responsibility for their own success; (5) value diversity; (6) balance learner and workforce needs; (7) prepare learners for the future; (8) recognize learners currently in the workforce; (9) create learning opportunities in developmental and applied contexts; and (10) coordinate existing resources.

BROADEN THE "SCHOOL-TO-WORK" FRAMEWORK

Our discussants frequently raised the need for postsecondary education to adhere to a "common language" when discussing workforce development issues. It should include a clear statement that resources of colleges and universities will support the education and training of the American workforce. This common language can be the basis for improved communication with other education sectors, across local, state and federal programs, and with employers.

To date, state-level discussions about education, employment and training have focused primarily on the needs of non-college bound youth. This emphasis has been spurred in part by the federal School-to-Work Opportunities Act which is designed to help youths make the transition from education to employment. But, this focus ignores the fact that more than half of high school graduates continue their education in postsecondary programs. According to recent data from the U.S. Department of Education, in 1994, sixty-two percent of high school graduates were enrolled in college the October following their high school graduation. And an even greater percentage of students enrolled in postsecondary education before the age of 30.[5]

The principles outlined in this report are consistent with federal workforce development block-grant legislation as well as the School-to-Work Opportunities Act. However, they must be broadly conceived to draw upon the full contributions of all training and learning providers and to facilitate continuous learning. It is better, for example, to conceptualize these premises in terms of "education-to-careers-to-further education" than the narrower, linear perspective implied by the term "school-to-work."

Many meeting participants argued that school-to-work programs must be tied to postsecondary education because of the high premium Americans place on college degrees. This opinion is consistent with a national study that found that nearly eight out of ten Americans are convinced high school graduates should go to college because it improves their job prospects.[6] Discussants pointed out that the School-to-Work Opportunities Act can offer a framework for involving both secondary and postsecondary education in workforce preparation.

THE SCHOOL-TO-WORK OPPORTUNITIES ACT CAN OFFER A FRAMEWORK FOR INVOLVING BOTH SECONDARY AND POSTSECONDARY EDUCATION IN WORKFORCE PREPARATION

For example, in Illinois, the federal School-to-Work Opportunities Act is a basic building block of a collaborative process to provide workforce development services at the local level, but leaders in the state say that it must be expanded beyond its narrow focus as a vehicle to help students make transitions from school to work. A primary goal of the Illinois Human Resource Investment Council is to build communication linkages with businesses and the public, educational institutions, and state agencies. According to Richard Wagner, executive director of the Illinois Board of Higher Education, "The policy goal should reflect appreciation for lifelong learning and education to careers."

BUILD A COLLABORATIVE SYSTEM OF EDUCATION AND TRAINING

Several discussants suggested a need to coordinate programs and services within statewide workforce development systems. They argued that the proliferation of education and job training programs often creates confusion about what services are available — a confusion that exists among employers as well as among potential employees. Participants suggested that state policymakers and educators should clarify the distinction between "job training" and "education" — in some cases narrowing it — because such distinction does not serve students well nor is it understood by employers. Further, operating workforce development programs on separate tracks frustrates coordination and states' abilities to design systemic approaches.

SHEEOs and other state education officials should play a leadership role in developing and implementing statewide workforce development systems, and participating in human resource investment councils and similar state-level entities. At the same time these education officials should be receptive to changes that are necessary to achieve effective coordination and a division of responsibility with other units of state government and to ensure broad involvement of all stakeholders, including business and labor.

Several states, including Illinois, Texas, Massachusetts, Wisconsin, and Oregon, already have made substantial strides in putting together boards, task forces or state human resource investment councils that bring together higher education, vocational job training programs, and adult education. Aside from their roles in getting important players together, some councils play a key role in developing performance measures and accountability standards, carrying out research, and developing and coordinating different kinds of skills standards. For example, North Dakota's Workforce Development Council grew out of the Governor's Executive Order to integrate workforce development and economic development policies in the state. In spite of dwindling resources, coordinating services helped the state be more responsive to the needs of its citizens.

Under the auspices of the federal government, state agencies may soon be pressured to coordinate their services. Currently, Congress is debating legislation that will consolidate over one hundred federal job training programs and give states authority and management responsibilities over the resources. Consolidation offers states the opportunity to create more effective and coherent workforce development systems; however, it is not clear whether final legislation will require states to develop such approaches. According to researcher W. Norton Grubb, "States could therefore simply allocate federal funds under a new block grant in ways that federal funds have previously been allocated, minus whatever cuts Congress imposes." It would merely replicate, under state control, what has developed under federal legislation. He suggested that, "To realize the opportunity that consolidation creates, it will be necessary to create a new and more unified system out of the many state and federal education and training programs that now exist. That in turn requires a vision of what such a system might be."

But many participants warned that states should not design their workforce preparation systems around the potential for federal money because those resources are never stable and can be reallocated with changes in the political wind. State leaders have compelling reasons to develop cohesive workforce development systems with or without federal funds and need to begin to develop strategies for creating an environment to help the system to thrive.

CAPITALIZE ON THE DISTINCT ROLES OF LEARNING PROVIDERS

Seamlessness — another policy recommendation for the postsecondary education sector offered by participants — will create a workforce preparation system in which each program is linked to the next level of education and training. Programs from job training, high schools, community colleges, colleges and universities need to be connected and articulated.

The roles of learning providers should be differentiated to capitalize upon their distinctive missions and strengths. At the same time they should work toward achieving effective coordination and sharing of resources so as to maximize their collective contributions.

The discussants confirmed that both two- and four-year colleges should participate in workforce development, and the distinct roles and issues that each addresses should be recognized and aligned. For example, all postsecondary education institutions will need to develop strategies to overcome employer dissatisfaction. Adult education and job training (including occupational skills instruction, on-the-job training and work experience, and sometimes job search assistance) have been successful at many community colleges and their activities should continue to be supported. Degree-granting colleges and universities are beginning to examine their admission policies and procedures, and align traditional programs and contextually-based curriculum and performance assessments. Some colleges and universities also are developing teacher preparation and professional development programs that incorporate applied teaching and learning strategies. These activities should be recognized and effective practices promoted.

PROGRAMS FROM JOB TRAINING, HIGH SCHOOLS, COMMUNITY COLLEGES, COLLEGES AND UNIVERSITIES NEED TO BE CONNECTED AND ARTICULATED

Participants identified many examples across the country where community colleges are delivering employee education and training programs to business and industry. For example, we heard about a "shadow college" in Arkansas in which college courses are taught on the plant floor. According to Westark Community College President Joel Stubblefield, "We served 149 industries last year. They approved the curriculum and described the expected outcomes. If we fail to deliver what they want, they get their money back. The problem is meeting the demand because we are the only college in Arkansas working directly with business and industry in this way. With state-level support, we want to take this model to other regions of the state and hope that colleges and universities will adopt it."

In another example, participants from Kansas described how colleges and universities can use their research capacities to address the technical needs of business and industry. The major aircraft industries (Boeing, Cessna Aircraft, and Raytheon Aircraft) have teamed with four state universities (Wichita State University, Kansas State University, the University of Kansas and Pittsburgh State University) to create an Aircraft Design and Manufacturing Research Center. The center will provide comprehensive research and development to support the civil aircraft industry and will allow for technology transfer within the industry. Most importantly, it provides education and employment opportunities for students who will be working and learning at the Center.

IMPROVE LEARNER PRODUCTIVITY

Becoming learner-centered, according to one conference participant, means focusing on the individual students and helping them connect to their goals. This requires that postsecondary education strive to understand what the goals of the individuals are — what they are trying to accomplish — and how to customize programs and courses to meet their needs.

Expanded efforts must be made to improve "learner productivity" by:

- **making training and education "learner centered"**
- **holding high expectations for learners**
- **supporting active learning**
- **capitalizing on technologies to achieve flexibility and access to learning**
- **making effective use of the time and resources of learners as well as providers.**

To ensure all students opportunities for future economic benefits and higher levels of civic participation, our discussants were unanimous in their feeling that educators need to focus on the individual learner. In a statement that captured the view of many participants, Jeffrey Baker, former commissioner of higher education for the Montana University System, reflected that "Many students come to colleges and universities with very strong aspirations for training and preparation for careers. A key to addressing the needs of students is gaining the involvement and commitment of postsecondary education institutions and faculty."

A number of states have put learners at the center of their state workforce development plans. For example, Missouri's State Plan for Postsecondary Vocational Technical Education is specifically aimed at identifying the learning needs of its citizens and aligning them with new and innovative education and training delivery systems. This also is the focus of state plans in Illinois and North Dakota.

States and their secondary schools, colleges and universities are working with various organizations to develop new programs and curriculum that connect learners to the real world. For example, the Center for Occupational Research and Development (CORD) develops curriculum in applied physics, communications, mathematics, and biology/chemistry for high schools and "tech-prep" programs (generally, the last two years of secondary and first two years of postsecondary education programs). According to CORD's president, Daniel Hull, the courses adhere to high standards and focus on problem-solving, are practical and relevant, emphasize associated hands-on learning, and retain integrity of course content.

But many students taking applied courses are concerned that they will be foreclosed from further education and postsecondary degree-attainment because most college and university admission requirements include completion of a core curriculum made up of traditional courses in mathematics, science, English, social studies and foreign languages. While this is viewed as a potential barrier to the successful transition of students from secondary to postsecondary education, CORD's data suggest that four-year colleges and universities are beginning to accept contextually-based courses in their admissions procedures. Over 70 colleges and universities in twenty states now accept applied physics and more than 40 institutions in nine states accept as Algebra I credit the applied mathematics series.

HELP LEARNERS TO MAKE INFORMED CHOICES

Neither business nor educational institutions have been effective at communicating to the public about the knowledge, skills and abilities needed by entry-level workers. Based on public interest polls and voter response to tax referendums for education, what the public expects from schools, colleges and universities may not align with what business has suggested it needs and what educators say they are delivering. One participant suggested that one way to resolve the communication gap between business and educators is to clearly define the skills effective workers and citizens need and the education and training experiences that colleges and universities can provide. He concluded, "governors and legislators are demanding that we establish better systems to communicate that information to students, employers and the public."

CLEARLY DEFINE THE SKILLS EFFECTIVE WORKERS AND CITIZENS NEED AND THE EDUCATION AND TRAINING EXPERIENCES THAT COLLEGES AND UNIVERSITIES CAN PROVIDE

Learners must have sound information and counsel upon which to base choices regarding learning experiences.

Individuals often do not know where to begin their search for information about postsecondary education and job training programs. To address this problem, a few states are beginning to develop "one-stop shops" that provide easy access to program and services information to students and employers. For example, the Colorado Workforce Coordinating Council recommends the creation of "one-stop" career centers to provide "access to the information and job exchange network and offer high quality basic and optional services to every Colorado job seeker and employer." The statewide network of one-stop career centers will provide: (1) a common applicant intake form; (2) general labor market information; (3) accreditation and evaluation processes for service providers; (4) eligibility standards for services for targeted groups; (5) advisors; (6) management of financial support; (7) performance-based assessments; and (8) an evaluation process.

Similarly, one-stop centers on Nevada community college campuses help non-traditional students, including welfare recipients and persons with disabilities, to access information on federal and state grant programs that provide support for assessment, tuition, book assistance and childcare. According to Richard Jarvis, chancellor of the University and Community College System of Nevada, "The community colleges and State Employment Service Division are partners. Branches on each campus ensure that students receive a full range of services from admissions to job placement without leaving the college campus."

CONNECT LEARNING AND WORK

Our discussants pointed out the need for strategies that will allow businesses and other employers to communicate their skill requirements to postsecondary education educators. When asked, employers report they expect high quality education and training programs that meet the needs of the workplace and they suggest several approaches — internships, cooperative education, and apprenticeship programs — for improving the connections between them and higher education.[5]

The contributions and involvement of business are central elements of successful statewide workforce development systems. Learning providers must strive to build effective partnerships with business and effective linkages with work-based learning opportunities.

Business also would like to provide more input into the curriculum. According to interviews conducted by the New Jersey Business-Higher Education Forum, to ensure optimal payoff for their education and training investment, employers want their employees to be able to apply what they have learned. They want more responsive curricula, and more flexibility to respond to changing employer needs. Additionally, employers want to know more about students before hiring them and they want easier access to that information.[6]

Notable models are beginning to emerge demonstrating how state leadership can support business and postsecondary education partnerships that address the training needs of employees. For example, Washington's Workforce Employment and Training Act (HB 1988) is designed to significantly expand the state's job retraining efforts. It is supported through a workforce training trust fund that receives about one cent of every $100 of existing unemployment taxes paid by business. In the 1993-95 biennium, the trust fund generated $35.1 million for enrollment at community and technical colleges.

In focus groups conducted by the Washington State Board for Community and Technical Colleges (SBCTC), participants reported that because the training programs developed under HB 1988 require business and labor endorsement, collaboration between colleges, business and labor significantly increased. And business participants suggested that this involvement improved their relationship with local colleges. The reasons for improvement were that: (1) many employers, not just a few representatives, were involved; (2) training needs were identified by employers rather than by colleges; (3) college staff accepted curricular input; and (4) programs included practical work experience in addition to classroom instruction.

SKILLS NEEDED BY NEW EMPLOYEES

Postsecondary education and business and industry should work together to support the education and training of the American workforce. Anthony P. Carnevale, Vice President for Public Leadership at Educational Testing Service recently made the following observations about the education needed by those who will succeed in the new economy:

- a formal education which includes basic educational preparation beyond high school
- preparation in an occupational or applied specialty
- formal or informal training on the job
- access to information technology at work

In national and state surveys requesting feedback on their workforce needs, employers respond that they are generally satisfied with the academic knowledge that recent college graduates have acquired in their majors; however, business and industry leaders would like colleges and universities to incorporate into the collegiate experience the following skills:

- leadership and communication skills
- quantification skills
- interpersonal relations and the ability to work in teams
- understanding the need to work with a diverse workforce at home and abroad
- the capacity to adapt to rapid change

Carnevale, Anthony P,. "Liberal Education and the New Economy," *Liberal Education* (Washington, D.C.: American Association of Colleges and Universities, Spring 1996); *Higher Education and Work Readiness: The View from the Corporation* (Washington, D.C.: Business Higher Education Forum, September 1995); *Enhancing the Connection Between Higher Education and the Workplace: A Survey of Employers* (Denver, CO: State Higher Education Executive Officers and Education Commission of the States, October 1995).

ENSURE AN EFFECTIVE SYSTEM

States need to create a workforce preparation system that allows agencies, educational institutions and businesses to learn from each other the most effective processes for doing business. Working primarily with corporations to help them find and transfer "best practices" among themselves, Jack Grayson, CEO of the American Productivity and Quality Center, suggested that educators "begin thinking outside the box and perhaps borrow practices from other organizations and businesses. For example, when health care providers wanted to design an effective registration and admitting system, we suggested that they look to other businesses — hotels and rental car companies — for help. Using a benchmarking process gives organizations opportunities to organize methods of learning and then allows them to transfer that know-how to others."

Learning processes should incorporate a common language and understanding that are shaped by high standards for performance, as well as incentives to support high levels of achievement; all learning providers should be accountable to identified performance standards.

Attempts to develop workforce preparation systems that identify and reward "best practices" are beginning to take shape in some states. For example, in California, the State Job Training Coordinating Council (SJTCC) is involved in an interagency collaborative process to design a new workforce preparation system for the state. Among its many efforts, the SJTCC is charged with responsibility for developing a performance-based accountability system that will annually publish report cards evaluating workforce preparation programs and providers.

Concomitantly, the California Higher Education Round Table — made up of the chief executive officers from all segments of public education in the state, the president of the Association of Independent California Colleges and Universities, and the executive director of the California Postsecondary Education Commission — recently made a formal commitment to advance workforce excellence. To accomplish this goal, the Round Table will focus its efforts in the following areas:

- examine university admission and curriculum articulation policies and practices to ascertain their compatibility with new curricula being developed in secondary schools
- review curricula and teaching and learning strategies to ensure their relevance and applicability to the world of work
- develop alliances with leaders of industry and labor in the public and private sectors
- strengthen existing relationships with other entities engaged in employment training and with local and state agencies charged with economic development
- conduct regional hearings to listen and respond to the public's concern about education, employment, and the condition of local economies.

While the SJTCC and the Higher Education Round Table are distinct state entities, leadership in these groups is currently attempting to align the workforce preparation activities in which the two are involved.

SUPPORT TEACHERS AND FACULTY

Many participants raised concerns that comprehensive workforce preparation systems will not work unless teachers are prepared to support and enhance "learner-centered" instruction. One teacher from Wisconsin spoke for many others when he said, "Colleges and universities need to prepare future teachers to value and impart to their students an appreciation for lifelong learning. Teachers and teacher educators will need support to change pedagogy. Professional development experiences will help them to prepare their students for more context-based experiences."

SHEEOs and other state education officials should work together to ensure that teacher education programs and professional development opportunities for practicing teachers are responsive to the need to better prepare elementary and secondary students for work and further education and training

But changing teacher training programs in colleges and universities will mean that state leaders and college administrators will have to tackle a current faculty reward system that bases promotion and salaries on attainment and maintenance of tenure, not student success. This may change at a "new college" recently proposed to faculty at Arkansas' Westark Community College. According to President Joel Stubblefield, many of the traditional structures and processes for educating students will be eliminated: college admissions will be based on proficiency levels of entering students; degree attainment will be based on whether students attain defined learning outcomes; seat-time and Carnegie course credit will be eliminated. In Stubblefield's vision "academic departments will be integrated to provide customized learning for the student. Because we want students to have certain capacities to learn for the rest of their lives, we need to organize our institutions to accommodate this learning model. So, faculty will be organized around teaching identified skills, not academic subjects."

AN AGENDA FOR STATE HIGHER EDUCATION BOARDS

State leaders are urged to support the following nine objectives for linking postsecondary education to workforce development systems:

- Create a vision of postsecondary education in workforce development
- Broaden the "school-to-work" framework
- Build a collaborative system of education and training
- Capitalize on the distinct roles of learning providers
- Improve learner productivity
- Help learners make informed choices
- Connect learning and work
- Ensure an effective system
- Support teachers and faculty

SHEEO will use these objectives as the basis for our continuing work to support a state higher education agenda aimed at ensuring successful transitions from school to further education and work. In addition, we are committed to working with all stakeholders — national and regional education organizations, governors' offices, state legislators, business and industry, colleges and universities, schools, and other education and training providers — in initiatives that will strengthen needed alignments.

Part of our continuing activities will be to identify and examine successful models and "best practices" demonstrating the involvement and leadership of postsecondary education in statewide workforce preparation systems. These models will be widely disseminated and will serve as a strategy to build the leadership capacity of state higher education agencies, colleges and universities in these systems. Our work will focus on the following issues:

- **high school feedback and admissions,** including new linkages and measures that are being established between high school performance and college success; evaluating work-based and other applied or contextual learning at the secondary level in the postsecondary admission process; using high school feedback systems for program improvements and student counseling.

- **articulation and transfer within postsecondary education,** including articulation and transfer between community colleges and baccalaureate institutions; community college to baccalaureate institution articulation of occupational programs; articulation of "tech-prep" curricula with baccalaureate completion programs; student tracking systems and their use in providing information feedback to institutions from which students transferred.

- **follow-up of program completers and employer feedback systems,** including the utility of alumni follow-up information for program assessment and review; the design of employer feedback systems and the utility of information that employers could provide for postsecondary program review and assessment; information which employers find important in their recruitment processes and in evaluating the training needs of their employees.

- **integration of classroom-based and work-based learning,** including achieving effective integration of academic and work-based learning; employer contributions to and sponsorship of work-site learning; measures of learning success in work-based experiences; effective higher education-business partnerships; integrating technology-based learning into the overall educational experience and evaluation of technology-based learning; integrating applied learning into teacher preparation and professional development programs.

- **effective coordination and planning,** including patterns of representation that states use in coordination and governance structures; responsibilities assigned to various state agencies for staffing workforce development initiatives; mechanisms states use in establishing working relationships across agencies and organizations (e.g., joint studies, executive summits); roles of governors, key legislators, business executives, state education leaders (particularly SHEEOs); contributions to workforce education and training by education providers, especially postsecondary education institutions.

NOTES

1 **The American Freshman: National Norms for Fall 1993,** American Council on Education and Higher Education Research Institute, University of California at Los Angeles (Los Angeles, CA: University of California, 1993).

2 Dillman, Don A., James A. Christenson, Priscilla Salant and Paul D. Wagner, **What the Public Wants from Higher Education: Workforce Implications from a 1995 National Survey,** Social and Economics Sciences Research Center (Pullman, WA: Washington State University, November 1995).

3 Grubb, W. Norton, **"Creating a Comprehensive Workforce Preparation System: Re-integrating Education and Job Training."** Presentation before the California State Job Training Coordinating Council, January 30, 1996.

4 Van Horn, Carl E., **Enhancing the Connection Between Higher Education and the Workplace: A Survey of Employers** (Denver, CO: State Higher Education Executive Officers and Education Commission of the States, October 1995); Task Force on High Performance Work and Workers, **Higher Education and Work Readiness: The View from the Corporation** (Washington, D.C.: Business-Higher Education Forum, September 1995).

5 **The Condition of Education,** National Center for Education Statistics (Washington, D.C.: U.S. Department of Education, Office of Educational Research and Improvement, 1996)

6 Immerwahr, John with Steve Farkas, **The Closing Gateway: Californians Consider Their Higher Education Systems** (San Jose, CA: Public Agenda Foundation for the California Higher Education Policy Center, September 1993).

7 Souders, John C. Jr., "The Coming Challenge: Are Community Colleges Ready for the New Wave of Contextual Learners?" in **National TechPrep Network Connections** (Waco, Texas: Center for Occupational Research and Development, May 1996).

8 Van Horn, Carl E., **Enhancing the Connection Between Higher Education and the Workplace: A Survey of Employers.** Also, several publications by the National Center on the Educational Quality of the Workforce, University of Pennsylvania provide a review of employer reaction to youth apprenticeships and internship programs, including: Zemsky, Robert, **"What Employers Want: Employer Perspectives of Youth Apprenticeships,"** National Center on Educational Quality of the Workforce (Philadelphia, PA: University of Pennsylvania, 1994); Lynn, Irene and Joan Wills, **"School Lessons, Work Lessons: Recruiting and Sustaining Employer Involvement in School-to Work Programs,"** National Center on Educational Quality of the Workforce (Philadelphia, PA: University of Pennsylvania, 1994); and Osterman, Paul and Maria Iannozzi, **"Youth Apprenticeships and School-to-Work Transition: Current Knowledge and Legislative Strategy,"** National Center on Educational Quality of the Workforce (Philadelphia, PA: University of Pennsylvania, 1993).

9 Ibid.

TOWARD MORE EFFECTIVE LEARNING ENVIRONMENTS: THE ROLE OF POSTSECONDARY EDUCATION IN WORKFORCE PREPARATION

WINGSPREAD CONFERENCE CENTER RACINE, WISCONSIN February 22-24, 1996

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